

REMARKS/ARGUMENTS

Favorable reconsideration of this application in view of the above amendments and following remarks is respectfully requested.

Claims 1-19 are pending in this application. By this amendment, Claims 1 and 2 have been amended; and Claim 19 has been canceled. It is respectfully submitted that no new matter has been added.

In the outstanding Office Action, Claims 1, 3, 10 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa (Patent Abstracts of Japan No. 08-205539) in view of Umminger et al. (U.S. Patent Application Publication No. 2002/0180413 A1, hereinafter “Umminger”); Claims 4-6, 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa in view of Umminger as applied to Claim 1 above and further in view of Hwang (U.S. Patent Application Publication No. 2003/0222627 A1); Claims 2, 11 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa in view of Umminger and Peron (U.S. Patent Application Publication No. 2004/0113596 A1); Claims 12-14, 16 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa in view of Umminger and Peron as applied to Claim 2 above and further in view of Hwang; and Claims 7 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa in view of Umminger as applied to Claim 1, or alternatively Yoshikawa in view of Umminger and Peron as applied to Claim 2 and further in view of Chinomi et al. (Patent Abstracts of Japan No. 10-174428, hereinafter “Chinomi”).

The rejection of Claims 7 and 15 as described in the Office Action is not understood. Claim 7 depends from Claim 1 but has been stated as alternatively rejected over Yoshikawa in view of Umminger and Peron as applied to Claim 2 above and further in view of Chinomi. Claim 15 is dependent upon Claim 2 but has been rejected over Yoshikawa in view of Umminger as applied to Claim 1 and further in view of Chinomi. Since Claim 7 depends

from Claim 1 it is not understood how a rejection previously applied to Claim 2 from which it does not depend is applicable to Claim 7. Likewise, since Claim 15 depends from Claim 2 it is not understood how a rejection that has been applied to Claim 1 would be applicable to Claim 15. Clarification is respectfully requested. More specifically, it is respectfully requested that this Office Action be withdrawn, that the amendment be entered and that a new clarified Office Action be issued.

Independent Claims 1 and 2 recite “controls a switching frequency of the main switch and a switching duty cycle of the main switch according to a momentary value of wave form current, flow into the AC power supply or that of current flowing into the rectifier circuit or that of current flowing into the main switch.” Claim 2 further recites “a boost reactor which has a primary winding and a feedback winding connected to the primary winding in series and coupled to the primary winding and includes a leakage inductance more than a predetermined inductance value.” It is respectfully submitted that the above recited features are neither disclosed by, nor rendered obvious by Yoshikawa, Umminger, Peron, Hwang or Chinomi or any conceivable combination thereof.

Yoshikawa describes a boost reactor L1, a main switch, a converting section which turns the input voltage into smooth output DC voltage, and a control section which controls the main switch to output a specific voltage according to a switch current. However, Yoshikawa does not describe the control section as recited in Claims 1 and 2 which controls a switching frequency of the main switch and a switching duty cycle of the main switch according to a momentary value of current wave form of current flowing into the AC power supply or that of current flowing into the rectifier circuit or that of current flowing into the main switch. Furthermore, the Office Action fails to point out where these features are found in Yoshikawa. That is, there is no statement in the Office Action asserting where a control section which controls a switching frequency of the main switch and a switching duty cycle

of the main switch according to a value of current flowing into the AC power supply or that of current flowing into the rectifier circuit or that of current flowing into the main switch is described.

Umminger describes a DC-DC converting circuit with a controller which controls a switching frequency and a duty cycle in the main switch. Umminger describes that a frequency of VRAMP (switching frequency) is varied according to a voltage value of a DC input voltage VIN. However, Umminger does not describe the control section as recited in Claims 1 and 2 which controls a switching frequency in the main switch and a switching duty cycle of the main switch according to a momentary value waveform of current flowing into the AC power supply or that of current flowing into the rectifier circuit or that of current flowing into the main switch. That is, the Office Action merely asserts that Umminger describes a DC-DC converting circuit (FIG. 3A) with a controller (10, 34) which controls a switching frequency in a duty cycle of a main switch (13, 15; paragraphs 4, 10 and 13). Therefore, Umminger lacks the capability to decrease power loss of the portion where the momentary value of current wave form of input current is low and achieve miniaturization, high frequency, and noise reduction.

With regard to Claim 2, Peron describes a magnetic circuit including a winding L0, a winding L1, winding L2 as shown in FIG. 5. As described in paragraphs [0061]-[0067] winding L is not included in magnetic circuit 11. For example in paragraph [0063] Peron states “[s]witch K is in series with an inductance L for controlling the di/dt value, connected to the second terminal 4 of the inductance L0.” In other words, the winding L is not coupled to the winding L0 and includes a leakage inductance more than a predetermined inductance value. Therefore Peron does not describe a boost reactor which has a primary winding and a feedback winding connected to the primary winding in series and coupled to the primary

winding and includes a leakage inductance more than a predetermined inductance value as recited in Claim 2.

It is respectfully submitted that neither Hwang nor Chinomi describes the features of Claims 1 and 2 described above.

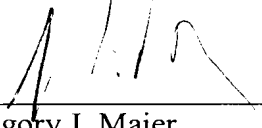
Accordingly, it is respectfully requested that the finality of the previous Office Action be withdrawn, that this amendment be entered, that the rejections of Claims 1-18 be withdrawn, and that Claims 1-18 be found allowable.

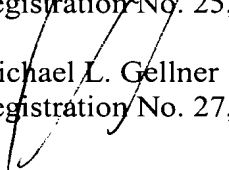
Consequently, for the reasons discussed in detail above no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below-listed telephone number.

Respectfully submitted,

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